

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
 - TEXT CUT OFF AT TOP, BOTTOM OR SIDES
 - FADED TEXT
 - ILLEGIBLE TEXT
 - SKEWED/SLANTED IMAGES
 - COLORED PHOTOS
 - BLACK OR VERY BLACK AND WHITE DARK PHOTOS
-
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

aw

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,504	03/08/2001	Hayami Sugiyama	204290US2X	2181
22850	7590	11/20/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			TRAN, HUAN HUU	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,504

Applicant(s)

SUGIYAMA ET AL.

Examiner

Huan H. Tran

Art Unit

2861

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 10-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28 and 29 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, 8, 9, 26, 27 is/are rejected.
- 7) ☒ Claim(s) 3 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2861

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action has been considered. The finality of the last action is withdrawn.

Election/Restrictions

2. Applicant's election with traverse of Group I, claims 1-9 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the Restriction Requirement has not established that an undue burden would be required if the Restriction Requirement was not issued and if all the claims were examined together. This is not found persuasive because for purposes of the initial requirement, a serious burden on the examiner may be prima facie shown if the examiner shows by appropriate explanation of separate classification, or separate status in the art, or a different field of search as defined in MPEP § 808.02. This prima facie showing has not been rebutted by appropriate showings or evidence by the applicant other than a conclusionary statement made that the search for one group of invention would include the search for the other invention. See the guidelines set forth in MPEP § 803.

The requirement is still deemed proper and is therefore made FINAL.

3. Claims 10-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 7.

Inventorship

4. In view of the papers filed on 08/27/2002, the inventorship in this nonprovisional application has been changed by the deletion of Yoshikazu MIYASHITA and Sigeyuki KAWAMURA.

Art Unit: 2861

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of the file jacket and PTO PALM data to reflect the inventorship as corrected.

Priority

5. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 2, 4, 5, 6, 8, 9, 26, 27 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sugiyama (WO 99 58340 cited in the IDS filed on 10/17/2001), Sugiyama (JP 10-151784 cited in the IDS filed on 06/08/2001), or by Sugiyama (JP 10-138541 cited in the IDS filed on 06/08/2001).

8.

As to claim 1, Sugiyama discloses a thermal head comprising:

a metal substrate (1221);

an insulating layer (1226, 1223) formed on the surface of the metal substrate;

a plurality of heating elements (1228, 1229) disposed on the surface of said insulating layer, said heating elements being arranged with a predetermined pitch along a plurality of lines in a main scanning direction, said plurality of lines being spaced from each other in a paper feeding direction perpendicular to the main scanning direction, and

Art Unit: 2861

a heat radiating element (1222) formed integrally with said metal substrate and projecting from the surface of said metal substrate to the side where said insulating layer is disposed.

The functional limitation "wherein current does not flow through said heat radiating element to said heating elements" is noted but it cannot serve to distinguish claims since it does not define any particular structure. See In re MASON, 114 USPQ 127 (CCPA 1957) (Functional statement cannot serve to distinguish claims, which are not process claims, from reference since it does not define any structure); In re DALTON AND COOLEY, 89 USPQ 271 (CCPA 1951) (In order for claims drawn to define structure to be patentable, they must depend upon novel structure set out; properties, functions, uses, and results that may appear from defined structure are not definitions of it and may not be solely relied upon to make claim containing them patentable unless there is positive setting out of structure itself in claims which must be responsible for properties, functions, uses, and results thereof; Doctrine of United v. Binney, 317 U.S. 228, 55 USPQ 381, and Halliburton v. Walker, 329 U.S. 1, 71 USPQ 175, was not limited by Faulkner v. Gibbs, 338 U.S. 267, 83 USPQ 192; cases hold that claim cannot be held valid where its language is too broad at precise point of novelty because of failure to positively set forth any of the novel structure; when claim defines a structure, structure at precise point of novelty must be set out by what it is; statement of property, function, use, or result of structure does not meet test.); In re HUTCHISON, 69 USPQ 138 (CCPA 1946) (Functional statements therein do not limit article claims; Statement in introductory clause that article is "adapted" for specific use is not limitation in patentable sense); and MPEP 2106, p 2100-8 where it is stated that "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation."

As to claim 2, Sugiyama clearly shows the limitation "wherein a part (1226), in contact with one line of said heating elements (1228), of said insulating layer and a part (1223), in contact with a directly adjacent line of said heating elements (1229), of said insulating layer are separated from each other by said heat radiating element (1222)."

As to claim 4, clearly teaches the limitation "wherein said heat radiating element (1222) is formed integrally with said metal substrate (1221)"

Art Unit: 2861

As to claim 5, Sugiyama clearly teaches the limitation "wherein portions (1225, 1224), in contact with heating elements (1228, 1229), of said insulating layer protrude in a direction toward said heating elements"

As to claim 6, Sugiyama clearly teaches the limitation ", wherein said heating elements are disposed such that the location, in the main scanning direction, of each heating element is coincident with the location of one of heating elements arranged in an adjacent line"

As to claim 8, Sugiyama clearly teaches the limitation "wherein said metal substrate includes a fin formed on a side opposite to the side in which said insulating layer is formed" (for example, see Fig. 28, elements 44)

As to claim 9, Sugiyama clearly teaches the limitation "two conductor patterns (1227, 1231) for supplying current to each heating element to generate heat are connected to each heating element on the side opposite to said insulating layer"

As to claim 26, Sugiyama clearly teaches the limitation "wherein one of said heating elements (1228) in one line and one of said heating elements in a directly adjacent line (1229) of the one line are separated from each other"

As to claim 27, Sugiyama clearly teaches the limitation "wherein an electrode (1231) for supplying a current to each heating element to generate heat is insulated from said metal substrate (by means of insulating layer 1225)"

Art Unit: 2861

Allowable Subject Matter

9. Claims 3, 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 28, 29 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter: As per claim 3, prior art of record do not show that the insulating layers are connected through a gap across the heat radiating element.

As per claim 7, prior art of record do not show the heating elements of adjacent lines being shifted in the main scanning direction.

As per claim 28, prior art of record do not teach or suggest that the insulating layers are connected to each other in a region in contact with a gap so that heat can be conducted therebetween.

As to claim 29, prior art of record do not teach or suggest the limitation that each heating elements is shifted by $\frac{1}{2}$ pitch relative to the location of one of the heating elements arranged in an adjacent line.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan H. Tran whose telephone number is (703) 308-0749. The examiner can normally be reached on M-F with Monday off, from 7:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Fuller can be reached on (703) 308-0079. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 09/800,504

Page 7

Art Unit: 2861

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1749.

A handwritten signature in black ink, appearing to read 'Huan H. Tran', with a long, sweeping horizontal line extending to the right.

Huan H. Tran
Primary Examiner
Art Unit 2861

hht